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(PATENT)

**AMENDMENTS TO THE CLAIMS**

- 1        1. (Currently Amended) A serial communications link comprising:
  - 2              a scrambler device for receiving a source encoded data bit stream, the scrambler device
  - 3              scrambles the data bit stream on a group-wise basis to produce scrambled groups of data in the
  - 4              data-bit-stream to statistically balance the number of logic low and logic high bits in the groups
  - 5              of data; and
  - 6              an ECC encoder device that receives the scrambled groups of data from the scrambler
  - 7              device and converts said scrambled groups of data into ECC-encoded data.
- 1        2. (Original) The system as recited in Claim 1, further comprising:
  - 2              a serializer for converting said ECC-encoded data into serialized data; wherein the ECC-
  - 3              encoded data includes frame alignment information; and
  - 4              the system further comprises a receiver for receiving said serialized data and converting
  - 5              the serialized data into data frames based upon the frame alignment information.
- 1        3. (Previously Presented) The system as recited in Claim 2, wherein the receiver
- 2              comprises:
  - 3              a frame-recoverer for converting said serialized data into data frames;
  - 4              an ECC decoder for converting said data frames into ECC-decoded data and error
  - 5              indications; and
  - 6              a descrambler for converting said ECC-decoded data into de-scrambled data.
- 1        4. (Previously Presented) The system as recited in Claim 3, wherein said frame-
- 2              recoverer uses said error indications in converting said serialized data into data frames.

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1       5. (Currently Amended) The system as recited in Claim 1, wherein said ECC encoder  
2       applies an error correction code in converting said scrambled groups of data into said ECC-  
3       encoded data.

1       6. (Currently Amended) A serial communications method, comprising the steps of:  
2       receiving a data bit stream, from an originating source, at a scrambler device, said data  
3       bit stream comprising data bits and other bits;  
4       converting, on a group-wise basis, said data bit stream into groups of scrambled data, by  
5       said scrambler device, prior to performing another data function on said data bit stream, said  
6       groups of scrambled data each comprising groups of data bits having a statistically balanced  
7       number of logic low and logic high data bits in each group; and  
8       converting said scrambled data into ECC-encoded data.

1       7. (Original) The method as recited in Claim 6, further comprising the steps of:  
2       generating a serial stream of the ECC-encoded data; and  
3       transmitting said serial stream.

1       8. (Original) The method of Claim 7, wherein:  
2       the ECC-encoded data includes frame alignment information; and  
3       the method further comprises receiving said serialized data and converting said serialized  
4       data into data frames based upon said frame alignment information.

1       9. (Original) The method of Claim 7, further comprising:  
2       receiving said serialized data;  
3       converting said serialized data into data frames;  
4       converting said data frames into ECC-decoded data and error indications; and  
5       converting said ECC-decoded data into de-scrambled data.

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1           10. (Original) The method of Claim 9, wherein the step of converting the serialized data  
2   comprises converting the serialized data into data frames based upon said error indications.

1           11. – 33. (Canceled)

1           34. (Currently Amended) A serial communication link comprising:  
2           a scrambler device programmed to convert, on a group-wise basis, a received bit stream  
3   into groups of K scrambled data bits so as to statistically balance the number of logic low and  
4   logic high bits in each group of K scrambled data bits, said received bit stream being without  
5   redundant bits and without being substantially only source encoded prior to being scrambled;  
6   and  
7           an ECC encoder programmed to convert said scrambled data into ECC-encoded data.

1           35. (Currently Amended) A serial communications link comprising:  
2           a scrambler device for receiving a data bit stream having being substantially only data  
3   source encoded no previous encoding or byte reordering done to said data bit stream, the  
4   scrambler device scrambles the data bit stream on a group-wise basis into scrambled groups of  
5   data in the data bit stream and converts said data bit stream into scrambled groups of data; and  
6           an ECC encoder device that receives the scrambled groups of data from the scrambler  
7   device and converts said scrambled groups of data into ECC-encoded data.

1           36. (Currently Amended) A serial communications method, comprising the steps of:  
2           receiving a data bit stream at a scrambler device, said data bit stream comprising data bits  
3   and other bits resulting from data source encoding that have not been previously encoded or byte  
4   reordered;

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5       converting, on a group-wise basis, said data bit stream into grouped scrambled data, by  
6       said scrambler device, prior to performing another data function on said data bit stream; and  
7       converting said scrambled data into ECC-encoded data.

1       37. (Currently Amended) A serial communication link comprising:  
2            a scrambler device programmed to convert, on a group-wise basis, a source encoded data  
3            an unneeded received bit stream[[,]] into grouped scrambled data; and  
4            an ECC encoder programmed to convert said scrambled data into ECC-encoded data.